

A "preform", as used herein and in the appended claims, refers to the combined, unitary, structure of a starter tube 10 and an exhaust tube 12. The starter tube 10 is a long cylindrical glass tube in which fiber optic layers are deposited to form the fiber optic strands. The exhaust tube, 12, is also a long cylindrical glass tube having, generally, and for most of its length, a larger diameter than tube 10. Tube 12 is preferably made with a larger diameter than tube 10 so that the gases escaping EX from tube 10 into tube 12 which get deposited along the inner walls of tube 12, particularly near the interface with tube 10, do not result in a build up which would block the passage of the gases. Also, a smooth transition to an increasing diameter allows for well controlled, more uniform flow of the gases and reactants. Therefore, tube 12 is connected to the starter tube 10 to allow gases IN to escape from the starter tube in a controlled manner. When the preform 8 is used in the manufacture of optic fibers, reactants and gas vapors are introduced into the end 11 of starter tube 10. The unused gases and vapors escape from the starter tube 10 at the end 13. It is important that the "excess" gases flowing out of the starter tube 10 into the exhaust tube 12 do so with as little turbulence as possible. Reducing turbulence helps ensure that the optic fiber layers are deposited more uniformly within the starter tube. To reduce turbulence, the exhaust tube 12 is preferably designed to have a larger diameter than the starter tube and to present no sharp curves or steps at the starter/exhaust tube interface. Furthermore, it is desirable that the exhaust tube be connected to the starter